



Reduced carcinogens. Premium taste.™

### Sidestream Smoke Reduction Chart

The smoke that is given off by the burning end of a cigarette, cigar or pipe between puffs is called Sidestream smoke. This is in contrast to the smoke that is directly inhaled by the smoker during puffing which is called Mainstream smoke. When a cigarette is smoked, approximately half of the smoke generated is Sidestream smoke, while the remaining half is Mainstream smoke.

Environmental Tobacco Smoke (ETS) is the term used for all forms of smoke that result from lighting a cigarette. ETS is composed primarily of Sidestream smoke but also includes small amounts of exhaled Mainstream smoke and components that diffuse through the wrapper into the surrounding air.

Both Sidestream and Mainstream smoke are complex mixtures of thousands of compounds. And because of the way it is formed, many carcinogens and toxins are found in greater amounts in Sidestream smoke than Mainstream smoke. Consequently, the passive smoker is exposed to many of the same harmful substances as the active smoker. The breakthrough process in OMNI cigarettes dramatically reduces carcinogens and toxins not only in Mainstream smoke but also in Sidestream smoke.

\* Denotes Carcinogens

\*\* Denotes Results Generated by Vector Tobacco

King-Size Full Flavor	Omni	Leading Competitive Brand	% Change
Ammonia (mg/cig)	2.05	2.13	-3.8%
Aromatic Amines:			
2-aminonaphthalene (ng/cig)*	59	210	-71.9%
3-aminobiphenyl (ng/cig)*	17.7	75.3	-76.3%
4-aminobiphenyl (ng/cig)*	12.0	21.3	-43.7%
PAHs:			
benzo[a]pyrene (ng/cig)	34.5	82.2	-57.7%
acenaphthylene (ng/cig)	338.42	1007.74	-66.4%
acenaphthene (ng/cig)	215.02	419.41	-48.5%
benzofluoranthene (ng/cig)	884.70	1512.58	-41.5%
fluorene (ng/cig)	520.85	821.83	-36.8%
phenanthrene (ng/cig)	757.36	1602.40	-52.7%
anthracene (ng/cig)	196.07	441.90	-55.4%
2-methylanthracene (ng/cig)	244.95	564.12	-56.6%
fluoranthene (ng/cig)	178.04	367.31	-51.3%
pyrene (ng/cig)	179.04	358.08	-50.0%
2-benzofluoranthene (ng/cig)	85.83	138.63	-37.4%
1,2-benzanthracene (ng/cig)	48.54	89.5	-45.8%

benz[a]anthracene (ng/cig)	114.51	28.41	NSD
benzo[b]k[1]fluoranthene (ng/cig)	52.53	52.00	NSD
benzo[e]pyrene (ng/cig)	36.75	52.42	NSD
<b>Carbonyls</b>			
formaldehyde (µg/cig)*	450	382	NSD
acetaldehyde (µg/cig)*	3120	1532	NSD
propionaldehyde (µg/cig)	379	848	NSD
acrolein (µg/cig)	262	381	NSD
crotonaldehyde (µg/cig)	102	157	NSD
trans-2-pentenal (µg/cig)	40.5	51.5	NSD
butyraldehyde (µg/cig)	70	131	NSD
isobutyraldehyde (µg/cig)	113	182	NSD
<b>Hydrogen Cyanide (µg/cig)</b>			
	70	70	NSD
<b>Carbon Monoxide (mg/cig)</b>			
	55.4	55.8	NSD
<b>Nitric Oxide (µg/cig)</b>			
	3543	2503	37%
<b>Mercury (ng/cig)</b>			
	9.2	8.6	NSD
<b>Trace Metals</b>			
polonium (pg/cig)	BQL	BQL	N.A.
nickel (ng/cig)	BQL	BQL	N.A.
lead (ng/cig)*	BQL	BQL	N.A.
cadmium (ng/cig)*	72	322	NSD
chromium (µg/cig)*	BQL	BQL	N.A.
arsenic (ng/cig)*	BQL	BQL	N.A.
vanadium (ng/cig)	BQL	BQL	N.A.
<b>Semivolatiles</b>			
pyridine (µg/cig)	206	315	NSD
anisole (µg/cig)	5.5	14.0	NSD
<b>Phenols</b>			
catechol (µg/cig)*	69.1	75.1	NSD
resorcinol (µg/cig)	147	249	NSD
hydroquinone (µg/cig)	67.1	43.9	NSD
phenyl alcohol (µg/cig)	BQL	BQL	N.A.
2-methylphenol (µg/cig)	69.4	84.5	NSD
3-methylphenol (µg/cig)	17.0	32.1	NSD
<b>Tar (mg/cig)</b>			
	19.8	26.1	NSD

Nicotine (mg/cig)	0.66	0.77	0.73
Volatiles:			
1,3-butadiene (µg/cig)	166	324	284
Isoprene (µg/cig)	1556	3409	349
Acrylonitrile (µg/cig)	83	145	
Benzene (µg/cig)	211	325	
Acetophenone (µg/cig)	346	657	
Styrene (µg/cig)	59	118	

BQL = Below Quantifiable Limits

N.A. = Not Applicable

\* **Denotes Carcinogens** - Several groups have developed lists of carcinogens in tobacco smoke: the International Agency for Research on Cancer (IARC); the US Surgeon General's list of harmful constituents in tobacco smoke; the National Toxicology Program; the American Health Foundation. In addition, there is also other research. Although these lists vary, somewhere between 40-70 of the approximately 5,000 compounds in tobacco smoke are considered to be carcinogenic, probably carcinogenic, or possibly carcinogenic to humans.

**Denotes Results Generated by Vector Tobacco** - Omni cigarettes have been extensively tested and levels of carcinogens and other toxins in both main stream and sidestream smoke. The following chart includes Omni test results, generated by Vector Tobacco, using innovative techniques to determine the chemical and of a number of polycyclic aromatic hydrocarbons (PAHs) that are independently examined by an independent laboratory.

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